THE Serenity Prayer” implores “change what you can, accept what you must, but know the difference.” This simple advice holds particular relevance to the process of aging and its participants, all of us. Not knowing the difference between the changeable and the acceptable categories substantially affects millions of lives.

The old joke of the aged gent with a bum leg who rejects his physician’s attribution of the achiness to his 85 years by pointing out the sturdiness of his other, just as old, knee, is point on. Unquestionably, too much of the symptomatology of the upper decades has been ascribed to aging, and hence, the “accept what you must” philosophy. Several reports indicate that inappropriate acceptance of a chronological explanation for physical symptoms affects health care utilization and even mortality (1). In an editorial that appeared in the Journal of the American Medical Association entitled “Age as a Risk Factor for Inadequate Treatment,” Wetle (2) wrote, “It is imperative that treatment decisions be based on characteristics and conditions of the individual patient, not on characteristics thought to be associated with age.” Neglect of a modifiable condition, which intervention may effectively redress, should prompt response. The reversibility of the muscle loss in 90-year-old nursing home residents’ thighs by an exercise protocol is a vivid reminder not to accept aging per se as the underlying mechanism of its production (3). The parallel observation of Schaie (4) regarding cognitive changes frequently notable in older individuals prompted Carstensen (5) to observe that “it is an illusion that irremedial psychologic deterioration is the modal course of old age.”

A recent report by Sarkisian and colleagues (6) reveals that 27% of women over the age of 80 attributed new, disabling symptoms predominantly to age, whereas only 4% of women under the age of 70 did so. Whether this increasing perception of advancing age as the causal agent is accurate prompted the authors to suggest that identification of the circumstances that are attributed to aging by older persons is an enlarging research need.

Quantitative acknowledgment of nonaging agencies in the health patterns of older individuals has been upgraded by the work of Sehl and Yates (7) reported in the April 2001 issue of The Journal of Gerontology: Biological Sciences. This magnus opus reviewed 564 papers (54,274 subjects) devoted to the description of functional decline in 13 organ systems in individuals aged 15 to 100 years old. Their conclusion was that 0.5% per year represents a mean rate of decline for most, but not all, functions, confirming an earlier estimate based on decline in various age-related athletic performances (8).

The importance of this effort in quantitating the actual rate of deterioration secondary to chronological aging is crucial in two specific regards. First, is aging’s stately pace. Presuming maximum functional capacity and tissue robusticity around age 30, which accords roughly to the end of growth and before age catabolism initiates, and also when athletic records are at their zenith, one can start subtracting 0.5% per year due to aging. This is such a shallow rate as not to be observed causally in clinical trials with a short experimental period.

The second derivative established by this central biomarker is that rates of decline that are faster than 0.5% per year are not due to aging and must therefore be accounted for by other, it is hoped, more tractable, agencies. Twenty years ago, disuse was identified as a major contributor in this regard (9). Physically trained individuals’ muscle power decays at about 0.5% per year, but in individuals in space, or with a casts limb, this rate can reach 1% per day.

Every body system is beholden to this vitality-usage linkage. Clearly, disuse is a process that is safely, cheaply, and nearly universally susceptible to improvement.

A dynamical view of the aging process arms the biogerontologist with an empirical framework for study. Establishment of a quantitative estimate of the central biomarker of the rate of aging provides a reference point from which allocation to changeable or acceptable categories may proceed.

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